

WHAT IS CLAIMED IS:

1. A method of organizing components to provide access to a service, comprising:
  - grouping components together to perform the service, wherein each component implements an interface for communicating with an assembly manager; and
  - defining an assembly, the assembly having a name and an assembly definition having metadata information identifying each component in the group of components and any further interfaces implemented by or used by any of the components, whereby the assembly definition is configured to be loaded into the assembly manager.
2. The method of claim 1, further comprising associating the name of the assembly with a role name associated with the service.
- 10 3. The method of claim 1, further comprising:
  - grouping the assembly with components to perform a second service; and
  - defining a second assembly, the second assembly having a second name and a second assembly definition having metadata information identifying the assembly and each component in the group of components and any further interfaces implemented by or used by the assembly and any of the components, whereby the second assembly definition is configured to be loaded into the assembly manager.
- 15 4. The method of claim 1, further comprising:
  - modifying one of the components;
  - creating a new component to filter information that passes through an interface connected to the modified component; and
  - modifying the assembly definition to specify the new component and an interface connecting the new component to the modified component, whereby the modified component and new component so connected produce filtered information compatible with other components in the assembly.
- 20 5. The method of claim 4, wherein modifying the component alters the processing of information and renders the modified component and information incompatible with the other components in the assembly.

(1)

6. The method of claim 1, wherein defining the assembly comprises identifying client and server relationships between the components and interfaces.

7. The method of claim 1, wherein the assembly definition is represented using Extensible Markup Language (XML).

5 8. The method of claim 1, wherein the components and interfaces comply with an object model architecture.

9. The method of claim 8, wherein the object-model is selected from a set of object-models including Component Object Model (COM), Bravo Interface Binder (BIB), and Common Object Request Broker Architecture (CORBA).

10 10. A method of providing access to a service by a component-based application, comprising:  
receiving a request from the component-based application that identifies a service;  
accessing an assembly definition associated with the service and having metadata information specifying a number of components used to perform the service and interfaces implemented by and used by the components;  
loading each component identified in the assembly data-structure into an area for processing; and  
connecting an interface associated with each loaded component to other components according to the meta-data information in the assembly definition to form an assembly, whereby the application has access to an interface for communicating with the assembly.

15 20 11. The method of claim 10, further comprising:  
connecting interfaces identified in the assembly definition to the loaded components; and  
connecting interfaces associated with components in the assembly definition but not identified in the assembly definition to the loaded components.

25 12. The method of claim 11, further comprising connecting interfaces in the assembly to components in a previously loaded assembly.

13. The method of claim 10, further comprising:

receiving an indication that the access to the requested service is not longer required;  
disconnecting the interface from each component associated with the requested  
service; and

5 unloading each disconnected component and the corresponding assembly definition  
while the component-based application remains loaded.

14. A method for gaining access to a service, comprising:

identifying a service for processing data;  
calling an assembly manager with a service request corresponding to the service; and  
10 accessing an assembly capable of performing the service, the assembly including  
components and interfaces specified in an assembly definition and loaded by the  
assembly manager.

15. The method of claim 14, wherein the service request comprises a name associated with  
the assembly definition.

15 16. The method of claim 14, wherein the service request comprises a role name associated  
with the service.

17. A computer program product, tangibly stored on a computer-readable medium, for  
organizing components to provide access to a service, the product comprising instructions  
operable to cause a programmable processor to:

20 group components together to perform the service, wherein each component  
implements an interface for communicating with an assembly manager; and  
define an assembly, the assembly having a name and an assembly definition having  
metadata information identifying each component in the group of components and any  
further interfaces implemented by or used by any of the components, whereby the  
25 assembly definition is configured to be loaded into the assembly manager.

18. The product of claim 17, further comprising instructions operable to cause the processor  
to associate the name of the assembly with a role name associated with the service.

19. The product of claim 17, further comprising instructions operable to cause the processor to:

group the assembly with components to perform a second service; and  
define a second assembly, the second assembly having a second name and a second  
assembly definition having metadata information identifying the assembly and each  
component in the group of components and any further interfaces implemented by or  
used by the assembly and any of the components, whereby the second assembly  
definition is configured to be loaded into the assembly manager.

20. The product of claim 17, further comprising instructions operable to cause the processor  
to:

modify one of the components;  
create a new component to filter information that passes through an interface  
connected to the modified component; and  
modify the assembly definition to specify the new component and an interface  
connecting the new component to the modified component, whereby the modified  
component and new component so connected produce filtered information compatible  
with other components in the assembly.

21. The product of claim 20, wherein modifying the component alters the processing of  
information and renders the modified component and information incompatible with the  
other components in the assembly.

22. The product of claim 17, wherein the instructions operable to cause the processor to  
define the assembly comprise instructions operable to cause the processor to identify  
client and server relationships between the components and interfaces.

23. The product of claim 17, wherein the assembly definition is represented using Extensible  
Markup Language (XML).

24. The product of claim 17, wherein the components and interfaces comply with an object  
model architecture.

25. The product of claim 24, wherein the object-model is selected from a set of object-  
models including Component Object Model (COM), Bravo Interface Binder (BIB), and  
Common Object Request Broker Architecture (CORBA).

26. A computer program product, tangibly stored on a computer-readable medium, for  
organizing components to provide access to a service by a component-based application,  
the product comprising instructions operable to cause a programmable processor to:  
receive a request from the component-based application that identifies a service;  
access an assembly definition associated with the service and having metadata  
information specifying a number of components used to perform the service and  
interfaces implemented by and used by the components;

10 load each component identified in the assembly data-structure into an area for  
processing; and

15 connect an interface associated with each loaded component to other components  
according to the meta-data information in the assembly definition to form an assembly,  
whereby the application has access to an interface for communicating with the assembly.

27. The product of claim 26, further comprising instructions operable to cause the processor  
to:

20 connect interfaces identified in the assembly definition to the loaded components; and  
connect interfaces associated with components in the assembly definition but not  
identified in the assembly definition to the loaded components.

28. The product of claim 27, further comprising instructions operable to cause the processor  
to connect interfaces in the assembly to components in a previously loaded assembly.

29. The product of claim 26, further comprising instructions operable to cause the processor  
to:

25 receive an indication that the access to the requested service is not longer required;  
disconnect the interface from each component associated with the requested service;  
and

30 unload each disconnected component and the corresponding assembly definition  
while the component-based application remains loaded.

30. A computer program product, tangibly stored on a computer-readable medium, for  
gaining access to a service, the product comprising instructions operable to cause a  
programmable processor to:

5           identifying a service for processing data;  
          calling an assembly manager with a service request corresponding to the service; and  
          accessing an assembly capable of performing the service, the assembly including  
components and interfaces specified in an assembly definition and loaded by the  
assembly manager.

31. The product of claim 30, wherein the service request comprises a name associated with  
10           the assembly definition.

32. The product of claim 30, wherein the service request comprises a role name associated  
with the service.